

NEW SERIES.]

AUGUST, 1873.

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# OUT WEST

A MONTHLY MAGAZINE

OF

ORIGINAL AND SELECTED ARTICLES,

BEARING PRINCIPALLY ON THE

ROCKY MOUNTAIN SECTION,

WITH A SUMMARY OF NEWS.

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"OUT WEST" PRINTING AND PUBLISHING COMPANY.

After using the white man to expel the Utes, these conceited brutes thought they could then expel the white man, and hold undivided sway over the country themselves.

Such were their plans in 1859, and, in pursuance thereof, they remained friendly with the settlements, and drove the Utes beyond the Snowy Range; then, in 1863, they opened hostilities against the white settlements, and did not cease thieving from and murdering our people until the autumn of 1868.

Here let me digress to point out that the general Government of late years has never recognized any right in fee simple to belong to any tribe of wild or nomadic Indians. It only recognizes in them a barbarous possession, which can be but little other or better than that of the savage beasts of the forest. This was the recognized legal status of the Indians of Colorado in 1859. The early settlements were in fact made here long prior to the extinguishment by the Government of any such possessory right as the Indians claimed to the country.

In February, 1861, a treaty was made at Fort Wise (now Fort Lyon) with the "Arapahoes and Cheyennes of the Upper Arkansas," by which those Indians relinquished "all the lands owned, possessed or claimed by them, wherever situated," except a tract south of the Arkansas River, below the mouth of the Huerfano.

In this Treaty occurs the following very significant article, (although it was afterwards stricken out by the United States Senate) which shows that the Indians not only made no objections to the white settlements upon their lands but felt also (at the time of the Treaty in 1861) a sense of gratitude for the kind treatment and protection received from them—

"ARTICLE II. In consideration of the kind treatment of the Arapahoes and Cheyennes by the citizens of Denver City and the adjacent towns, they respectfully request that the proprietors of said city and adjacent towns be permitted by the United States Government to enter a sufficient quantity of land to include said city and towns at the minimum price of one dollar and twenty-five cents per acre."

But the "Cheyennes and Arapahoes of the Upper Arkansas," were not all there were of the Indians of Colorado of their name. There were

also the "Cheyennes and Arapahoes of Fort Laramie" as they were known and designated at the Indian Office in Washington; the former confederate bands claiming all of Colorado east of the mountains and south of the South Platte River, and the latter claiming that portion east of the mountains and north of the South Platte, whilst the Utes claimed all the mountain country from the Laramie Plains in the north into New Mexico on the south, and westerly into Utah.

It was not until 1865 that a treaty was concluded with all these confederate bands of the Arapahoes and Cheyennes. In the mean time our settlements had increased, the pre-emption laws of Congress had been extended over the Territory, and a United States Land Office had been established at Golden City for the entry of lands north as well as south of the South Platte River, *most of which had not yet been treated for with the Indians by the general Government.*

I mention this fact to show that both Congress and the Executive Departments of the Government did not recognize any fee simple right of the Indians to the soil at the time of the first settlement of this country; and also further to vindicate the people of Colorado against the charges—so commonly made against the pioneers of every border—that they were trespassers upon the recognized rights of the Indians when they took possession of this heretofore wilderness region.

But to return to the course of events. While living in apparent security in the midst of the Cheyennes and Arapahoes, there was among the early settlers ever more or less apprehension of danger from them. In 1860, it was said that a plot existed to burn Denver and massacre its inhabitants; but it was discovered to the old mountaineers by the Comanches, who were at that time on a visit to the Cheyennes, and prevented by its timely exposure. Subsequent events fully proved these tribes capable of concocting and carrying out a wholesale massacre of this kind.

The first attack on any of the early settlers was, however, made by the Utes, in the mountains on the head of the North Fork of the South Platte. A party of prospectors, consisting of Dr. John

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## THE INDIANS OF COLORADO.

Colorado is divided about equally into mountains and plains, the western half consisting of mountains and the eastern half of plains. The Indian tribes found in possession of the country in 1858-9 were similarly distinct.

The "Plains Indians" were the Arapahoes and Cheyennes, together with Sioux, Kiowas, Apaches, and Comanches, who were friendly to them and visited much with the first two named.

The Mountain, or Ute Indians, consisted of the Grand River and Uintah bands of the north-western part of the Territory, the Tabeguaches of the southern portion, and the Capotes and Munches just across the line in New Mexico, but roaming most of the time in Colorado.

These different bands of Utes were all related and friendly to each other, and all common enemies to the Plains Indians. For the Mountain or Ute Indians and the Plains Indians always were, and still are, hereditary enemies. No treaty of peace or amity has ever existed between them; whenever and wherever they come together they fight, even though they meet as individuals, or as delegations in Washington for the transaction of business with the general Government, unless they are restrained by the respective agents having them in charge.

The first settlements in Colorado were made upon the lands claimed by the Plains Indians, or at the eastern base of the mountains, and from thence into the mountains upon the lands or country claimed by the Utes. Hence, our first settlements were made in the very midst of the "dark and bloody ground" of these hereditary enemies. In those days, however, the Plains Indians had full possession of the country to the very Foot-Hills, and disputed with the Utes the possession of the Parks and the Mountains to the

summit of the Snowy Range; beyond the "Range" they seldom ventured.

Our settlements being thus more immediately among the Plains Indians, the Utes looked upon the earlier settlers as their common enemies and fit subjects for plunder and the scalping-knife. This hostile feeling on the part of the Utes very naturally secured to us, for the time being, at least, the friendship of those among whom we were more immediately located, and it was to this never-failing hostility existing between the Mountain and Plains Indians that the first settlements owed their security from Indian attack and destruction, rather than to any ability on their part to make successful defence, had they been attacked by either the one party or the other. The Arapahoe and Cheyenne welcomed the white man, because he expected in him an ally against his hereditary enemy the Ute; the latter hated him all the more, because he appeared to be such.

The white settlements, therefore, became "houses of refuge" to the former when pursued from the mountains by the victorious Utes. Twice at least in the early history of Denver was this the case,—the Utes pursuing the Arapahoes nearly to the "Gates of the City" and the latter not stopping their flight until safely within the populous part of town.

As subsequent history shows, it was not so much the love these Plains Indians felt for the white man, as it was fear of the Utes, that secured our weak settlements from their attacks. They could give up none of their ancient hate of the Utes, and hence they acquiesced in a joint occupancy with the white man of the belt of country for which they were fighting, and which they were not likely to hold much longer by their own prowess against their more hardy mountain neighbors.

This "Peace Policy" of the Government has been induced and maintained by a maudlin public sentiment in the Eastern States, where the voters are, but where the Indians are not. They judge of these nomads by the Hiawatha standard;—but let them read the Indian history of their own State, let them read of the struggles of our forefathers with a race of men who dwelt in villages, and whose right in fee simple to the lands they occupied was recognized by the general Government—Indians as much superior in docility and useful knowledge to these wild Arabs of the Plains as the Newfoundland dog is to the beggarly wolf. And, withal, let them not regard the frontier as a penal colony, peopled with the off-scourings of creation, but let them remember that it is settled with a good Christian people lately from their own midst, who have brought their religion and morals with them, and seek to maintain them here in all respects as acceptably to civilization and humanity as elsewhere.

It is to be hoped that a truer appreciation of these things is becoming general in the East. The treachery at the "lava beds," and the cowardly assassination of a distinguished general of the army, has done more to educate the country to a true sense of the character of the warfare of the Western borders than all the years of suffering of the infant settlements west of the Missouri, or all that has been said or done by the Peace Commission. In Captain Jack we behold the result of years of effort to civilize a wild Indian and "settle him upon a reservation in pursuit of the peaceful art of agriculture." In General Canby we see exemplified the too confiding nature of civilized man in dealing with remorseless barbarism. Let us learn once and for all that we "may cry Peace, peace, but that there is no peace"—that there is an irrepressible conflict in constant progress upon the borders between Civilization and Barbarism; that it has been so in the past, is so to-day, and will be in the coming years, until the latter is no more. Civilization is enterprising and aggressive, whilst barbarism is stubborn and relentless. The former is peaceful and confiding, and full of care for the future, while the latter is warlike and treacherous,

thoughtless of the future, and heedless of consequences. Barbarism strikes at Civilization with the vindictiveness of despair, not unlike the viper at the aggressive heel of man; and, as there shall be no peace between the serpent's head and the human heel, so there can be no peace between the savage wandering life of the nomadic heathen and the peaceful home-life of an enlightened Christian civilization. These wild Indians of the West

Toil not, neither do they spin,

but depend upon the chase and upon robbery for sustenance. Warfare is their national pastime, and consists in stealing upon the unprotected of their enemies (whether Indians or Whites), and killing, scalping, and carrying into a captivity worse than death itself.

If there be philanthropists who think that such savages can be transformed into useful citizens, we would gladly have them take them East, and make the experiment there. There is plenty of room, and to spare, in the West for peaceful civilized men and women of every race of mankind, but there is no room in the West above ground for savages to be located and fed and clothed and armed by the general Government, thus enabling them to depredate upon the timid settlements of civilization along the borders; and this cannot be done without exciting the unanimous voice of the West in earnest protest against such a policy.

With most tribes of Indians contact with civilization is death. It acts upon them like salt on a snail; it demoralizes and destroys them. The Indian of North America is passing away, and we say—Let him pass. It is in God's own Providence that these things are so, and we feel no cause to complain. Have there not been other races of men upon the earth who have fulfilled their destinies, and passed away? And so of beasts of the field. "There were giants in those days," but they are no more; and there were huge and fearful monsters which are now only known to old-time histories. Other species are following them. A few more decades will witness the extinction of the Buffalo and Elk, the Grizzly Bear and the Mountain Lion, and we doubt not that the wild Indian is going with

L. Shank, James B. Kennedy, and Judge Wm. M. Slaughter, were fired upon on the afternoon of June 26th, 1859, at the above place; the two former were instantly killed and Dr. Shank scalped.

During the same year, another party of prospectors, on one of the upper tributaries of the Uncompahgre River, west of the Cochetope Pass, were killed. All that is known of their fate is that they went in that direction and never returned, and, early the following year, the remains of twenty-seven persons were found in a ravine, with shreds of clothing and pack-saddles and camp equipage indicating them to have been the same party. The timber and other surroundings showed evidence of a most obstinate struggle for life by the poor victims. This, no doubt, was also the work of the Utes.

At "Dead Man's Gulch," west of California Gulch, during the same year, the remains of nine more of our brave struggling prospectors were found.

In the fall of 1859, a miner in the "Boulder Diggings" was preparing his supper in his rude cabin on the mountain side, when he was pierced by a Ute arrow; although not mortally wounded, he was disabled for life.

In August, 1860, occurred what is known as the "Kiowa Raid," by which our citizens lost some five hundred head of fine horses, work-cattle, and mules. The Indians gathered this amount of stock together in one night in the region about Denver, and swept across the country in a direct course to old Fort Wise, leaving a plain trail over which they were pursued to the vicinity of the Fort by a party of the owners of the stock. On asking aid from the Fort, the owners were prohibited by the Commandant from attempting to take their property from the Indians, although it was identified as theirs in full view of the Post. His reasons for protecting these thieves with their plunder from the wrath of our settlers are best known to himself, he gave none to them. This robbery was the work of Kiowas, Arapahoes, Cheyennes, and Sioux.

In 1861, about thirty-five head of fine horses were stolen from the ranch of William Starling, three miles below Denver, and the same night

and by the same Indians, Steele's ranch, on Cherry Creek, twelve miles above town, was robbed of about thirty-five more. All these were run off by the Ute Indians, who were followed by some of the owners. A few of the horses were found in possession of the Indians, and recovered by the aid of Agent Head, at the Ute Agency on the Conejos, two hundred and fifty miles from where they were stolen.

Graves are pointed out, in many parts of the Territory, of men, women, and children, murdered by the different tribes of lawless wards of the general Government, prior to the year 1861—men as peaceable and orderly as dwelt in lands not infested by savages—men risking their property and lives to subdue the wilderness and make habitable that which was before their advent recognized as a barren desert and waste place. Citizens of the United States and pioneers of peaceful civilization were robbed and murdered without provocation. There is not an instance to be cited where a settler was ever the aggressor or ever gave provocation to the savages for his murder and robbery, nor was retaliation in kind ever made by the citizens. The terrible retribution visited upon them in later years at Sand Creek is no exception to the foregoing statement. That was not the work of the *citizens* of Colorado, but it was the work of the *Soldiery of the United States*, armed, equipped, rationed, uniformed and commanded by an officer under the pay and by the authority of the United States Government.

Need any one think it strange, after all our unavenged wrongs from these same savages, if there was never any sympathy among the citizens of Colorado for the dead Indians of Sand Creek, Had Sand Creek been followed up by the Government, and the Indians been smitten wherever found, the numerous murders and robberies by them that followed in Colorado, in Kansas and Nebraska, and all over the Plains, and which did not cease in this Territory until 1868, would never have occurred, and hundreds of lives of men, women and children would have been spared, any one of whom was worth more to Christian civilization than every savage on the Plains. The Government, however, saw fit to denounce Sand Creek and offer peace to the savages.

their doors, often right on the side-walk, while brown-eyed señoritas looked out of iron-latticed windows, and talked to the "señores caballeros," who lounged against the bars in their broad sombreros, silver-trimmed, dainty short jackets, buckskin silver-buttoned "pantalones" over full white drawers. The whole scene was like a succession of Philip's Spanish pictures. Our walk led us to the Alameda, or public garden, planted with rows of orange and banana trees, and beds of beautiful flowers. The band of a battalion just arrived from Guadalajara was playing, and playing extremely well, but it had to stop while the Retreat was beaten. Of all hideous and indescribable noises, Mexican martial music bears away the palm. Imagine two or three boys learning to play on cracked cavalry bugles of different keys; then add half-a-dozen other boys drumming on old tin trays and toy drums, and you will have a fair idea of what goes on four times a day in every Mexican city.

On our way home, we went into two of the principal churches. It was the Thursday in Holy Week, and they were crowded with people kneeling on the floor, and gorgeous with lights and ornaments. The High Altar was a blaze of tinsel, gilt vases, flowers, and candles. One kind of decoration was really pretty, though rather absurd. From long strings hung green balls, and on examination I found they were covered with live mustard and cress growing on flannel, as we used to grow it on bottles when children.

Amongst the many beauties of Colima are the "Huertos," or fruit orchards, belonging to the different residents, and our kind host proposed one evening to drive us out to his, which is one of the finest. It was about a mile from the Plaza, just outside of the town, where the ill-paved streets with long rows of one-storied houses, had changed to sandy lanes with a few miserable huts.

There was a Garden-House, through which we entered, with a large bath at the end of a cool tiled Piazza; and through a bower of roses and flowering creepers a narrow walk, hedged on either side with scarlet hibiscus, led to the garden proper. This consisted of rows of coffee, oranges, limes, mangos, bananas, zapotes, with the slender stems of the coco palms rising through

the lower growth, their broad heads of leaves forming a dense roof over head. When we returned to the Garden-House, the gardener's pretty little bare-footed boy had prepared us each a glass of the clear "Aqua de Coco" (the coco-nut milk) standing on a plate in the midst of a wreath of roses and hibiscus.

We made another equally interesting expedition to the Hacienda de San Cayetano to see the cotton mills belonging to General de la V: and his brother. They are about two miles from the city, along a lovely lane between stone walls enclosing gardens of bananas and coco-palms. Figs and prima-vera trees (so valuable for their fine timber) with their glory of golden flowers, arch over head, and this avenue leads you straight to the gate of the Hacienda. General de la V: received us at the door, and took us into a long low room, divided off by lattices five feet high, and serving for office, sitting-room, bed-room, and armory. The gates are kept closed all night, and twenty men armed with muskets in case of robbers or revolutions. After coffee, ham, and dry bread (there was no butter, though all around was fine pasturage) we went over the mill. It is worked by a thirty-horse-power steam engine and forty-horse-power water wheel; the water coming from the river close by, in a stone dyke one-fourth of a mile long. The looms and spindles are from Boston; the steam-engine from Brooklyn. Two hundred men, about thirty boys, and one hundred women, all Mexicans, are employed. Mr. B.; the English chief engineer, told us that they work well when some-one is by to keep an eye on them. We went through all the rooms, and saw the cotton in every stage, from the first, where—freed from the pod—it is put into the carding machine and the seeds taken out, to the looms, where the coarse white "Manta" (cotton cloth) is made. The engine house was exquisitely clean, and the "governor" ornamented with a bunch of tropical flowers in honor of our visit. We then went along the water conduit to the two reservoirs into which the water is let at night, and back to the Hacienda, past a field of mulberry trees for silk worms, of which six thousand are raised on the estate every year. The Patio (Court) has a garden of fruit trees at

them. That these are all disappearing from causes which no human power can stay is a well recognized fact; and let us add that there is nothing in this fact, so far as the Indian is con-

cerned, that will ever cause a tear of regret to be shed in the West.

FIFTY-NINER.

## MEXICO AND THE MEXICANS IN 1872.

NO. 2.—COLIMA.

If verbal photography were invented, how gladly would I use it to describe the view from our windows, as it passed before us like a strange series of pictures.

We were puzzled to know where we could be the morning after our arrival in Colima. Were we in Old Spain, or really in the Tropics of the New World? Buildings, trees, people, were such a strange mixture of ancient and modern, eastern and western.

From our sitting-room, with its fresco-painted walls, tiled floor, and large doors and windows opening to the ground, we looked out upon the Plaza des Armes. In the centre was a fountain, with its group of idlers gossiping with the water-carriers. Round it a broad paved square, which was watered at dawn in a truly primitive fashion; half-a-dozen bare-legged "muchachos" (boys) dashing water over it with buckets; evidently the use of hose had never entered into their minds. Outside the square ran a tiled pavement with orange trees planted every eight feet, each protected with a quaint double stone seat. Then came a broad carriage-road, and then again the houses.

Our host's house, with a fine Moorish front, took up the whole of one side of the Square. The rooms were on the first floor, above stables, offices, etc. Under the Portale, or arcade, in front of it were a set of stores, and on the side-walk were "cajones" (literally boxes) as they call the booths where common goods of the country are sold. On the north and west sides of the square run single-story buildings with arches in front; the south side is occupied by an old church with a very pretty bell-tower built of stone, and the States Prison, a fine building, with a picturesque clock-tower on its flat roof. In front of the prison stood a few soldiers in blue and red, with white kepis. Women in gay cotton dresses, with

rebosas over their heads, and men in white trowsers, pink shirts, and broad palm-leaf hats, strolled lazily along the Plaza.

Over the flat red-tiled roofs rose a group of Coco-nut Palms, against a back-ground of purple mountains, and in the cloudless blue sky sailed some score of turkey buzzards.

The patient little burros jogged by with loads of green maize fluttering in the hot breeze, or four earthen water-jars in wooden panniers. Under the orange-trees, sellers of rebosas and serapes were chaffering with their customers, asking three times as much as the article was worth, and gradually coming down to the lowest possible price. Now a man came by crying, "Pasteles, pasteles," with a tray of sweet bread on his head, or another with fruit,—water-melons, sweet limes, bananas, oranges, and zapotes. The latter are much like brown sugar in a hardened crust, with shining black seeds, the size and shape of young cockroaches, but very good when one gets accustomed to them.

From the Plaza des Armes a narrow street leads to the Plaza Nueva, or New Square, where the market is held. Most of the goods are heaped on palm-leaf mats, called Petates, on the ground, under light palm-thatched sheds, with green parrots crawling about the rafters. Fruits, vegetables, and crockery seemed to be the chief articles in the market; and in the stores great quantities of leather work, boots, saddles, straps, etc., of excellent quality were for sale. After "la comida," four o'clock dinner, we set out for a walk, and found to our amazement that we ladies were expected to go without hats, and only a light shawl thrown over our evening dresses. It is a charming custom, for one never goes out until after the heat of the day is over, and then what is the need of a hat?

All along the streets, ladies were sitting out at



on yours, until he has made a hole large enough for him to creep through. If he is to be kept in, it must be by sheet-iron or tin. The pet prairie-dog, however, need not be caged at all; he will, with great satisfaction to himself, adopt your parlor as his own, and will faithfully pay you rent by decorating all your furniture with a profusion of carving; or he will live outside your door, and never be tempted to desert you though the boundless stretches of the prairie may be spread before him.

This attachment of the prairie dog to his adopted home, and the fondness which he always displays for being petted, are somewhat remarkable, when it is remembered that his natural habitat is in a section of country where, until very recently, there have been but few human beings, and they of the wildest types. The old dogs, it is true, are almost untameable, and will resent any advances of friendship by savage bites, but the young ones soon become as domesticated as kittens. Jack, when running about the room, will come at once in answer to his name, and give himself up with perfect abandon to being fondled and stroked and rubbed. He especially enjoys having his breast rubbed, and will sit up on his haunches for long enough to undergo the operation, blinking his eyes with serene satisfaction and grasping with his little hands the hand that is fondling him, as though to keep it to its work. Jill, as befits her sex, is somewhat more shy, but evidently enjoys the caresses of friendship quite as much.

Jack has other distinguishing characteristics besides his boldness in familiarity, and some of these—to his shame be it said—are not very creditable to him. At breakfast and supper time, he spreads himself over the food saucer to such an extent that his spouse has great difficulty in securing any part of its contents, and, when the greater part of the meal has disappeared, he so far forgets the courtesy which ought to characterize his sex, as to drive his mate away altogether. It is at such times that the resemblance to the monkey chiefly manifests itself, the chattering and complaining which always accompany the quarrels being almost exactly like the noises made by monkeys in similar circumstances.

As a rule, the prairie dog sits up like a squirrel when feeding, and holds his food with his "hands," lifting it to and from his mouth with short quick movements. He never, however, picks up his food with his "hands," but always with his mouth, from which he afterwards transfers it to his fists. His claws *all* play the part of fingers; they are all doubled round what he holds, the grasping of an object as between a finger and thumb being never practised. In his natural state, the prairie dog is herbivorous; domesticated, he is very fond of bread and milk, cracker, cake, and sugar, especially the latter, for his tooth is a very sweet one.

Jack's selfishness manifests itself in the bedroom as well as in the dining-room; he always chooses the softest part of the couch, and reposes thereon with utter disregard for the comfort of his partner. And here we may mention what strikes us as a great peculiarity in the prairie dog; he frequently sleeps—as we do not remember to have seen any other animal sleep—on his back, with his head well pillowed, and all his toes turned upwards to the skies. No more perfect caricature of a portly Alderman taking his siesta after a heavy feast could be imagined than is afforded by our Jack when he has gobbled the last morsel out of his saucer and has then thrown himself at full length upon his pallet of hay.

To what next shall we compare him? If it be really true that curiosity is a womanly weakness, then we must say that he is intensely like a lady, for all of the prairie dog's characteristics curiosity is one of the most marked. Jack and Jill will sit almost by the hour on the window ledge, watching, with an air of the deepest attention, all that goes on outside. At such times, they sit on their haunches, and their little hands hang down upon their breasts with a demureness which somehow always suggests to us a Quaker origin. When anything particularly interesting attracts their attention, they raise themselves up and appear to sit on the lower joints of their hind legs, and, on extraordinary occasions, their interest fairly lifts them up on to the tips of their toes, and their bodies look as though they were propped up on their tails. Sometimes, when thus



the northern end, and opposite the mill runs a long low building of separate tenements, two rooms deep, for the work-people and their families.

About ten a. m., the sun being very hot, we

drove home laden with pomegranates and bouquets of orange flowers. The next day, after a week in beautiful Colima, we began packing again for the second stage of our overland journey.

ROSA DEL MONTE.

### JACK AND JILL.

Not the Jack and Jill of poetic fame, but a couple far less blundering and awkward. Our Jack has much more agility than to tumble down and break his crown; when he falls, he takes care to fall—as all sensible people do—upon his feet.

"Jack" and "Jill" are only household names for a couple of little pets; scientific people would call them *Spermophili Ludoviciani*; common folk, who don't know Latin, call them Prairie Dogs.

Strange little creatures they are; different from anything else in the animal world, yet like so many things. Are they rats, or rabbits, or squirrels, or monkeys? Neither; and yet a little of all.

Dogs they certainly are *not*, whatever else they may be. They have nothing of the dog in them, but the bark, and that is far from canine. Let us try to describe them. They are some eight or ten inches long, plump (almost pudgy) covered with a thick coat of soft, reddish-brown fur. The head has a peculiar cropped appearance, owing to the shortness of the ears, which look as if they had been trimmed off, like a terrier's, as closely as possible. The eyes are large and bright. The tail is two to three inches long, slightly bushy, and carried, at times, well up in the air. The legs are short and delicately shaped, and the feet (are they feet or are they hands?) have five long toes (are they toes or are they fingers?) provided with long black claws, the soles (or palms) being lined with bare skin which is almost white.

Such, as nearly as our powers of description can set him forth, is the Prairie Dog, from which description the reader who has never seen one may perhaps gather that he is rather more like a squirrel than anything else.

Jack and Jill were brought to us when they were quite little fellows, scarcely old enough to leave the "parental roof" with safety. They were forthwith put into a box which was carpeted with earth, and a supply of hay given them for food. We knew that they were of the earth earthy—that their natural home was a burrow in the ground—so, when we had strewn them a shallow flooring of soil, we congratulated ourselves that we had furnished their house in first-rate style. The result was that, next morning, the weather being cold, we found them almost frozen to death, their little limbs stiff, and themselves in an almost lifeless torpor. So we concluded (as our common sense would have told us before if we had used it) that a box with a sprinkling of soil on the floor is not as warm as a hole in the ground; and, when we had succeeded in thawing the poor little fellows back to life by exposing them to the full sunshine, we gave them a warm nest, and a diet of bread and milk, on which treatment they have ever since thriven to our hearts' content.

It was not long before Jack and Jill "cut their teeth," and not much longer before they began to use them in persistent efforts for liberty. If you want an emblem of pertinacity, take a captive prairie-dog. He will gnaw, gnaw, gnaw, at the walls or lid of the box in which he is confined, until he drives you almost distracted, and you are ready to knock his head against the wood. When you go to administer reproof or punishment, he looks out at you with such an innocent expression and half opens his mouth with such a winning air of friendship that, instead of scolding him, you are forced to take him out and fondle him. As soon as you put him back, he repays you by beginning to gnaw again immediately, and he will keep it up, with no lack of perseverance on his part and no lack of vexation

"taken up." The result is that those who come hither in the expectation of entering *Government land* and irrigating and farming it, find that Colorado, with all her millions of broad acres open for pre-emption or homestead, has still no place for them.

It is to remedy this defect, by bringing water upon large areas of Government land lying away from the immediate borders of the streams (and which are, therefore, beyond the ability of the individual settler to irrigate), that the movement has been set on foot to which we have already made reference.

The scheme which has thus far been propounded is, in brief: to create a fund for Irrigating purposes by issuing the bonds of the Territory; to construct with such fund large canals which will carry water to extensive tracts of Government land; to have the land thus brought under water open to pre-emption at two dollars and a half per acre instead of at one dollar and a quarter; and to have half the proceeds from the sale of such lands (thus doubled in price) transferred from the Government to the Territory to cover the interest and principal of its bonds.

A scheme of this character, if carried out upon such a scale as is contemplated, would revolutionize the face of Nature and would also change the whole current of events in this Western country. The brown prairies would become covered with the green and gold of a vast harvest-field, and the "treeless country" would be dotted over with orchards and groves and forests. Food would become cheaper, hence labor would become cheaper, and capital would be induced hither to engage in the many branches of manufacture for which the Rocky Mountain Section offers so much raw material and so many facilities, and for the products of which there is already so much demand. Instead of sending away thousands of dollars annually for the purchase of breadstuffs, we should be able to supply the demand which even now exists in the East for the products of our soil, and thus we should be enriched in place of being impoverished as is now the case. The result of all this would certainly be quickly manifest in a strongly stimulated progress and development of the whole section.

Some such scheme as that which we have outlined must, as we have said, be ultimately carried out. The West requires it. She has an abundance of natural wealth—gold and silver, copper and lead, coal and iron—inviting the influx of a vast population of miners, manufacturers, traders, etc., and these must be fed, and must be fed from her own lands; for it would be suicidal for her much longer to send away her money for that which she can certainly produce herself. The general welfare of the Nation requires it, for all the naturally fertile portions of the national domain are more or less occupied, and it becomes the Government to provide a field of labor for the thousands who are weekly crowding to our shores and whose natural impulse sends them westward. Here, where mining and manufactures must always keep up a market for agricultural products, is, of all sections, the section to which they should be induced to come. In their present state these boundless stretches of prairie are comparatively valueless, but they may be transformed, by comparatively small outlay, into productive agricultural lands, affording homes and occupation for thousands of new-comers, and adding enormously to the wealth of the Nation.

Just to what extent and in what manner the Government ought to aid in this work can scarcely be decided without a much more thorough knowledge of all the facts bearing upon the subject than is now available. The scheme, of which we have given the outlines above, proceeds on the assumption that one dollar and a quarter per acre will cover the cost of constructing the canals and other necessary works. This estimate, we imagine, will be found far too low, for it must be borne in mind that to make the cost per acre small, canals must be taken out at once to cover very large areas, and a great part of the money thus outlaid will necessarily lie dead for a length of time, as it must be several years before all the land will be taken up by settlers. Many other matters will have to be taken into consideration, and it is desirable that a clear knowledge of all the facts bearing upon the subject should be obtained before any scheme whatever is decided upon. It is much more important that, when the thing is done, it should

watching the course of events, they make a peculiar chattering with their jaws, but whether this signifies anger or fear we have not been able to determine; sometimes they bark at what they see, and when anything appears on the scene which alarms them, they make a speedy retreat to some well-known haven of safety; a minute or two, however, suffices to bring their noses out of the place of concealment, and the nose is speedily followed by the whole body; for, true to his lady-like ideal, the prairie dog would rather lose his head than not know what is going on. The same curiosity is manifested when the animals are in a wild state. At the approach of any one, they race over the ground to the tops of their burrows, and there, squatting down so that only their heads and tails are visible, they keep up a continual little bark with the former and a continual little jerk with the latter, the two keeping exact time with each other. Their anxiety to know all about the intruder keeps them above ground until he is almost close upon them, when, with a defiant waggle of their little tails, they kick up their heels, and dive into the bosom of

mother earth. Some of the prairie dog towns, as they are called, are of great extent, and their inhabitants number tens of thousands. Captain Marcy describes one of their towns as having an area of twenty-five miles square, or six hundred and twenty-five square miles, or 400,000 acres. Allowing the burrows to be twenty yards apart each way, and five dogs in a burrow, the population in round numbers would be twenty-five millions. What so many of them find to live upon is a marvel. Though their streets are abundantly wide, there is usually very little grass growing in them, and in probably nine cases out of ten, there is no water within several miles.

It is said, by those who profess to know, that the prairie dogs are hibernating, closing their burrows about the end of October, and remaining in a torpid state throughout the Winter. As our knowledge of them has been altogether acquired in Colorado, we cannot vouch for the fact, for here, even in mid-winter, three out of four of the days are so sunshiny and so genial, that neither the prairie dogs nor any other creatures have much excuse for hibernation.

SOAP-WEED.

## IRRIGATION.

The scheme which has been originated for the Irrigation of the Public Lands in Colorado and other Western States and Territories has already been brought, by means of a short paragraph, before the notice of our readers; it is worthy, however—whether we regard its magnitude or its economic importance—of lengthier remark.

It is certain that, if Colorado, and other sections similarly circumstanced as to rainfall are to have a food-supply of their own, they must, sooner or later, have a thoroughly comprehensive and well-regulated system of Irrigation.

Colorado is now sending East for a large portion of her breadstuffs, and has been doing so ever since the miners began to throng into her gulches and to sink their shafts into her mountains. Every day is adding largely to the number of consumers, and still larger sums must be sent away (impoverishing the Territory and materially retarding her progress) unless a very

greatly increased production of the cereals can be brought about.

It is scarcely necessary to say that the lack of production is in no way referable to unfavorable conditions in the soil; nearly all the world knows now that Colorado soil, when properly irrigated, produces as fine a quality of wheat as can be raised probably anywhere else on the face of the earth—wheat of such quality that it is eagerly bought, when it can be obtained, in the Eastern markets, at higher rates than are paid for any other.

The drawback lies in the difficulty of getting water upon the soil.

Individual effort has thereabouts spent itself in this work. Almost everywhere along the creeks and rivers, small farmers have taken out their ditches and have carried the water over the tillable land bordering them, and there now remains very little land so situated, which has not been

be from \$3 to \$4 per acre. The Colony land actually cultivated (exclusive of gardens, etc., included in the Town Site), is scarcely 500 acres. A second ditch is being taken out of the Monument, of the same size as the Fountain Ditch; seven miles have been completed, and have cost \$3,150.

In the Arkansas Valley, the Central Colorado Improvement Company have taken a ditch out of the River 12 miles above Pueblo, and have run it thence to the St. Charles River about 10 miles above its mouth. This ditch is 7 feet wide at the bottom at its head and contracted to 5 feet at its lower end. It has been laid out and all the permanent work done with a view to enlarging it hereafter. At present, it has capacity for irrigating about 10,000 acres of bluff land, and when enlarged will cover about 20,000 acres. Its cost per acre has been about \$8.00; when enlarged, its increase of capacity will, of course, cost less proportionately, but the average cost is not likely to be less than \$6.00. As yet none of the land under the ditch, with the exception of a little immediately around the town of South Pueblo, has been sold. The Engineer informs us that though the ditch has been running over two months, it gives at the 13th mile only 30 per cent. of the water taken in at the head, owing to the seepage into the soil which has never before been wet since the flood. This shows the necessity of constructing large irrigating ditches at least a year before they are needed.

It will be noticed that the above ditches show a great difference in their cost per acre. This is owing, chiefly, to the difference in the character of the country along their routes. Where ditches have to follow, (as is frequently the case) the winding contour of bluffs, and to double up and down the ravines of intervening creeks, and so forth, the cost of construction is necessarily much larger than when they are carried along unbroken country. It will be very exceptional, however, where a large canal can be located, without *some* proportion of such work, where probably several miles of ditch will have to be constructed, in order to get over an actual distance of a few rods. The construction of extensive and expensive dams, reservoirs, etc., will also, of necessity, from a part of any large sys-

tem of irrigating works. The means of storing water, indeed, will be fully as important as the means of carrying it to the land.

Our readers will not have failed to notice that only a very small proportion of the land brought under water through the construction of the ditches which we have mentioned, is actually under cultivation—in some instances, not more than a tithe of it. For this reason, we think our remark is justified that there is no need for haste in the carrying out of any general system of irrigation. Although very little *government* land, which can be easily irrigated, is obtainable, there are hundreds and thousands of acres of good land under water, in close proximity to thriving towns, which are awaiting settlement.

It may be urged that the prices at which such lands are offered are too high to make them an inducement to men of small capital. We believe, on the contrary, that they are just such lands as men of small capital should buy. The purchasers may have to pay a little more per acre than they would have to do in case large areas of government land were put under water and offered for sale, but they will get full value for the extra amount. Their proximity to towns, where they can have abundant social advantages, where their children can have the benefits of education, where they can make their purchases on favorable terms, and where they can always find a ready market for their products, is fully worth any excess in price which they may have to pay for their lands. Such excess will certainly not amount to many tens of dollars, for it cannot be impressed too strongly upon men of small means about to engage in the cultivation of the soil in Colorado that the thing for them to aim at is a *few acres thoroughly well cultivated*. Irrigation must ever be more or less costly, and the wisest policy for the farmer will always be to get as large crops off as small an area as he possibly can. If we were asked to advise a man with a few hundred dollars, coming into the Territory with the intention of tilling the soil, we should say:

Begin on a small scale; buy no more land than you can cultivate with your own hands or with those of your family; five or ten acres will be all you can manage; grow those things which will yield you the most to the acre, and grow them

be done wisely and well, than that it should be done hurriedly and perhaps unadvisedly. The idea that there is any necessity for haste in the matter, as some seem to imagine, is, we believe, a mistaken one. Let counsel be taken, and prudence be exercised. The first thing requisite, it seems to us, is a Government Commission to investigate the subject in all its bearings, and to gather together the facts on which alone intelligent opinions can be based. After that has been done, it will be time enough to go to Congress, and suggest just what aid the Government ought to render to further the object in view.

Meanwhile, it may be of service to present a few facts respecting some of the larger Irrigating Canals which have recently been constructed in Colorado by Colony or other corporations, as the experience which has thus been gained can scarcely fail to be of value.

The "Union Colony" at Greeley have constructed three canals, a mill-power canal  $1\frac{1}{2}$  miles long, and 20 feet wide on the bottom, and two irrigating canals known as "No. 2" and "No. 3." No. 2 is taken out of the Cache-la-Poudre about fifteen miles above the Town, and runs on the north side of the river for a distance of 28 miles, at a distance of from two to three miles from its bank. It was originally built 10 feet wide on the bottom, contracting one foot in width at the end of each five miles; in 1872, it was enlarged to 15 feet wide on bottom and 4 feet deep for 20 miles. This ditch is capable of watering about 32,000 acres. No. 3 waters the town and about 8,000 acres of "suburbs," lying principally in the delta of the Platte and Cache-la-Poudre; like No. 2, it is taken out of the latter river and is about 14 miles in length. The two ditches are, therefore, capable of irrigating about 40,000 acres of land; their cost has been \$60,000, or a dollar and a half per acre. The lands outside of town are sold at from \$10.00 to \$25.00 per acre, and there are now from 6,000 to 8,000 acres (about one-fifth of the whole) under cultivation.

The Canal of the St. Louis Western Colony at Evans, is taken out of the South Platte, and is surveyed and located for 26 miles of Main Ditch, and 14 miles of an auxiliary line called the West Branch. The Canal is completed and

water running in the same for the following distances: Main Trunk,  $8\frac{1}{2}$  miles long, 10 feet wide on the bottom; east branch,  $11\frac{1}{2}$  miles long, 8 feet wide on the bottom; west branch, 12 miles long, 4 feet wide on the bottom. This Canal covers about 55,000 acres of land, but has only capacity at present to supply water to 22,000, "if managed on the Salt Lake System." The number of acres actually under cultivation is 2,100, or a little less than one-tenth of the whole. The cost of the canal per acre has been \$1.25. A smaller ditch, six miles long, irrigates the Town and small adjoining tracts. It has cost \$7,000, being considerably more per acre than the large canal.

At Longmont, a ditch was commenced by the Colony, and afterwards purchased by the "Highland Ditch Company," who are now proceeding with the work of construction. It is scarcely far enough advanced as yet to furnish any figures of value. When completed it will be from 35 to 40 miles long, exclusive of laterals, and it is expected that 20,000 inches of water can be run through it, and that every inch will irrigate an acre. The estimated cost of the Canal per acre when completed is about \$3.00. It is intended to sell the water at from \$1.00 to \$1.50 per inch.

At Colorado Springs the Fountain Colony have taken a ditch out of the Fountain about  $3\frac{1}{2}$  miles above town, running thence a distance of about  $11\frac{3}{4}$  miles to two reservoirs situated on the high ground to the back of town. This ditch is  $2\frac{1}{2}$  feet deep, 6 feet on the bottom, and 11 feet on the top for the first 9 miles, after which it is 2 feet deep, 5 feet on the bottom and 9 feet on the top. A small ditch connects this Fountain ditch with the Monument Creek so that water from that stream can be turned into it at pleasure. The two reservoirs for storing water have a capacity of 3,000,000 cubic feet. The colony have about 2,700 acres, including the town site, of about 1,200 acres, under this ditch. The cost has been; Ditch, \$12,000; Junction Ditch and Dam, \$625; Reservoirs, \$750; total, \$13,375, or about \$5 per acre for the land which can be irrigated. It should be stated, however, that there is other land, besides the Colony lands, which might be irrigated from the Fountain Ditch, and the cost, if that were included, would

## OURAY.

Come and let us take a stroll together on the piazza of the Manitou House. There is surely no pleasanter place, this hot weather, in all Colorado. The cooling breezes come right down from Pike's Peak, whose snowy summit looks, in this clear atmosphere, as if it were a mile or two distant, though aspiring tourists find the miles multiply into eight or nine; the Fountain babbles and brawls, with never-ceasing music, over its boulder-strewn bed a few yards in front, and fills the air with freshness; the leaves of the thickly-foliaged trees quiver and dance and rustle, as though exhilarated by the strange buoyancy of the atmosphere: everything, in short, encourages us to forget that we are in the dog-days.

With what lazy satisfaction the guests are enjoying it all! Dinner is just over, and, filled with the comfortable complacency which that meal so generally induces, they are resigning themselves to whatever comes to hand most easily—some to semi-somnolence; some to a quiet chat; some, like you and me, to a slow-paced saunter to and fro.

Things have changed—have they not?—since the Indians of the mountains came down through this Ute Pass to fight with their enemies of the plains, and camped in this very glen, and made their votive offerings at the Boiling Fountains but a few rods away, thinking to propitiate the Spirit who manifested himself in the bubbling gas, before they joined in conflict with their foes. The "march of events" is made with rapid strides in these latter days.

Strange thoughts, as he meditates on the transformation, must surely pass through the mind of Ouray, the Ute Chief, who sits there by the door of the Hotel, in the attitude of one of the sculptured Pharaohs at Egypt's temple-doors, his hands resting upon his knees, and his eyes fixed in that strange steadfast gaze, which looks at nothing, yet seems so full of contemplation, even as silence oftentimes seems more full of wisdom than speech itself. He takes no heed of the gay groups around him, nor even of the two little girls who stand arm-in-arm in front of him and stare, with childish freedom and wonder, at his brown face

and his plaided shirt, and the necklace and pendant which adorn his breast, and the gay blanket which is gathered round his body and over his knees, and the mocassins which clothe his feet. There he sits, motionless and impassive, as though the glen were still a solitude, and he its only inhabitant. Were I a painter, I would paint that group—a picture of the Barbarism that has passed its prime and is hastening on to its decay, and of the young Civilization that is coming, so fearlessly and so quickly, to usurp its place.

Ouray, however, is little of a barbarian at heart, though one by birth. In bygone years, he has ever been a friend of the white man, and a lover and maker of peace, and this fact, coupled with his high position in the Ute Nation, renders him especially worthy of note and consideration.

He is frequently spoken of as a Ute and the chief of the Utes. He is, in reality, neither.

By birth he is an Apache, but became engrafted into the Ute Nation when quite a child, and has ever since clung closely to its fortunes, contributing not a little to its importance. He stands forth, without doubt as the most influential man in their nation, but, at the present time they recognize no one as their supreme chief, being divided up into bands which have little unanimity or cohesion. Herein is our safeguard against a "general Ute War" which is every now and again being held up as a scarecrow by those who can have little knowledge of the true state of affairs. Divided in their counsels, and unable to come to agreement, the Utes can never be formidable as foes. At the worst, they can only raid, in scattered bands, upon our outlying and isolated settlements.

Little was known of Ouray, until after the appointment of Major Head in 1860, to the agency of the Tabeguache Utes, and his removal to Conejos, the immediate home of that band. There he found Nevada, the Head Chief, and Ouray as Counsellor.

Major Head, with his many years' experience, derived from close association with the red man,

with all the care and skill and cultivation that is possible. If vegetables will yield you more to the acre than cereals (as they, of course, will) grow vegetables; if onions will yield you more than potatoes, grow onions; there is proportionately as much excess of demand over supply in Colorado for any one of these things as there is for another. The time may come, probably will come, when the supply of vegetables and small fruits may equal the demand; then the cultivator of the soil will have no choice except to grow cereals, but that time has not come yet, and the settler is wisest who grows those crops which will yield him the best return per acre.

Colorado's most pressing need at the present time is not more land under water, but more people of the right stamp to cultivate that which is now lying idle. Of the many thousands who are crowding into the Territory, there are but comparatively few who are likely to make farmers or gardeners. The statements which are continually being made about the rich resources of the country and about the health-restoring influences of the climate bring hither hundreds affected with ill-health of some kind or other who have the vain expectation that they will find gold and silver "lying about loose," but they bring only few who have the means to buy a plot of land, fence it and put up a house, buy a team and implements and seed, and, over and above that, have intelligence and industry and perseverance enough to go to work at the cultivation of the soil with a fair prospect of success. We are drawing our population too much from the cities and towns and too little from the rural districts. Even such as come from the latter come with the vaguest ideas as to the state of things here, and are frequently disappointed at the outset because they find themselves surrounded by conditions altogether different from what they have been accustomed to. It would pay the Territory, through its Board of Immigration, and it would pay the various organizations who are interested in bringing an agricultural population hither, to spend their money, (instead of scattering their pamphlets and circulars indiscriminately over the face of the earth), in sending intelligent agents into the districts where such a population as we want is likely to be found, for the purpose of dis-

seminating accurate and detailed information about the country. Such people should be told exactly how much capital they will need to set them going, how much per acre they can buy land for, what it will cost them to build their houses, how much farming implements and seed will cost, what the transportation of themselves and families will swallow up; what sort of soil we have, what the grass looks like, what kind of work irrigation is; in fact, everything which can enable them to form a true idea of the country and of the circumstances in which they will be placed should they decide to come. If possible, arrangements should be made by which implements and seed and other necessities could be supplied to them at wholesale rates; and, in special cases, time should be given for the payment for the land. If this were done, we should surely have fewer people coming into Colorado without a dollar to fall back upon, and fewer who would turn on their heels because the grass is short and brown, and "they are sure a country which grows grass like that doesn't amount to anything." We need to send out our missionaries and proselytize like the Mormons, for be it remembered that that peculiar people win their converts not so much by the attractions of Polygamy as by the promise of a home in an earthly Garden of Eden.

Let us first get every acre of land which is now under water into the hands of people who will make them yield all the produce that they are capable of yielding; then, let us set to work to bring about the irrigation of the broad stretches of country which are now unavailable for cultivation.

Another important matter to which attention ought to be directed is the careful regulation of the use of water. Now, in many districts, every man is "a law unto himself" in this matter, and the consequent waste of water is enormous. In seasons when water has been scarce, it has frequently been the case that those whose farms happen to be the highest up the streams or ditches have been guilty of shameful waste whilst the crops of those below them have been dying for want. We must have such a regulation as will ensure both a fair and an economical use of the water which Nature gives us.



distribution, and continuing through the administration of Governor Cummings. So extended did these complaints become, that a new and more extended general Treaty, known now as "The Confederate Ute Treaty" was brought about by the agents in 1868, the success of the negotiations in this case also being due in a great measure to the activity and shrewd diplomacy of Ouray. In order to show how well grounded were some of the complaints and how steadfast in his friendship and good faith, in face of great provocation, was the subject of this sketch, it may not be amiss here to detail a few facts which might otherwise seem of little importance.

Under the provisions of the Treaty made by a commission headed by Governor Evans in 1862, the Tabeguaches were to receive Ten Thousand Dollars' worth of provisions and useful articles of husbandry. Just at the time of Kaneache's raid, which we have described, an invoice of these articles was being transported across the country, and was shortly afterwards distributed at Fort Garland by the agent. The writer had the opportunity of seeing of what these provisions and "useful articles" consisted.

First as to provisions. There were twenty barrels of sugar, the coarse black drippings of some Louisiana Sugar-house, mixed with a goodly proportion of Mother Earth. No merchant in those days paid freight across the Plains on 25 lbs. of barrel, in which to transport even the best quality of sugar, much less such worthless rubbish as that which was sent to Fort Garland. Then, there were ten thousand pounds of rice, all of indifferent quality to start with, and much of it, having become wet through storms on the Plains and the open condition of the freighters' wagons, came from the sacks in masses of black mould, utterly worthless for any purpose.

The assortment of "useful articles" looked as though the agent who purchased them had bought the entire stock of some bankrupt country hardware merchant. Among other things was a box weighing 500 lbs. filled with *spades*, the blades of which were made from very poor Boiler Iron, and without a particle of steel in their composition; to a white farmer or settler they would have been altogether valueless, and an Indian could put them to no possible use.

There were also Braces of an antiquated pattern, with Bits made solely from Iron, which would have hardly penetrated a pine-apple cheese; Drawing-knives that could not have been made to take the rind off a pumpkin; Butcher-knives of a pattern and quality which an Indian would not thank anyone for; a large lot of Axes equally bad, and of a size never used by Indians; and a number of Carpenter's Adzes which the Mexicans thought were some newfangled kind of hoe. The above does not half complete the list.

It is to be remembered, in considering the wisdom of the purchase, that Wheat has always been a most desirable article of food with the Utes, and, at that time, commanded only from five to six cents per pound, one pound of it being worth more, as an article of diet, than two of the Rice, and yet the actual cost of the rice when delivered at Fort Garland, was 36 cents per pound. The sugar could only have been of service to them as a sweet-meat, and it was much too poor to serve that purpose.

Many other articles, of little more value, might be included in the category, but sufficient has been recited to show how great a strain was put upon the forbearance of Ouray, who had, even at that time, as keen an appreciation of the rights of his band and of the value of the articles which were being foisted upon them, as any white man in the country. These articles, be it remembered, came, not in the character of presents, but under solemn treaty and contract made with a great Nation (the United States) and as the consideration for the release of many broad acres, from the sale of which vast sums had been realized. Coming, as such treatment did, but twenty days after his noble action in saving the lives of the settlers along the Huerfano, it was galling to Ouray to an extent which no one but those then intimate with him could appreciate.

Ouray, nevertheless, has been steadfast in his adherence to a policy of peace and friendship; and, at a time when further negotiations between the Government and the Utes cannot be far away, it is no small matter to have at the head of the latter a Chief whose past history displays such a record of friendship and discretion.

H. A. W.

was not slow to perceive, in the young brave, the rising man of the nation; and he soon made of him a friend and companion, and even a member of his household. Mrs. Head, (a Mexican lady,) seconded her husband's efforts, instructing the young chief in her native language, so that he became sufficiently versed in it to take the place of Government Interpreter for his band, a position which he has ever since held to the satisfaction of the different agents who have since been appointed, and of his own people.

In the year 1862, seven of the Tabeguache band, headed by Ouray, and accompanied by Agent Head, visited Washington, the visit resulting in a treaty, by which the Utes transferred to the Government a large portion of the Mountain District of Colorado, Ouray contributing largely, by his discretion and tact, to the success of the negotiations.

Meanwhile, Nevava, fearing the growing influence of the young chief, betook himself to the country north and west of the "Big Mountains," where he became better known as the Chief of the Grand Rivers and the Yampa Utes, over whom he held control until the Summer of 1869, when he was gathered to his fathers. On the departure of Nevava for the Northwest, Ouray became leading chief of the Tabeguaches, with Shawano as war chief of the band.

To show the friendly spirit towards his white neighbors which has always characterized Ouray since his assumption of power, it may suffice to give one or two instances.

In 1867, whilst Governor Cummings had charge of the Colorado Superintendency, Kaneache, chief of the Muaches, whose home was the country about Cimarron, New Mexico, got into a dispute with a United States officer, and the quarrel ran so high that threats to shoot were freely exchanged. Through the shrewdness and sagacity of Lucien B. Maxwell, an actual collision was averted, but Kaneache's heart, to use his own words, "became bad," and, betaking himself to the cornfields of the Purgatoire (which corn he claimed grew upon his own soil) he began to appropriate the crops to his own use. The Mexican planters were so exasperated that they opened retaliative hostilities, and the commander

at Fort Stephens (then a military camp near the foot of the Spanish Peaks) was sent for, and repaired to the spot, a few miles above Trinidad, with all possible speed. Meeting Kaneache, he ordered him to *leave a track*, and, on the haughty chief declining to do so, proceeded to compel him. To what extent the Indians suffered the writer is not aware; two soldiers were wounded in the fray.

Kaneache now took the war-path in earnest, sweeping up the Purgatoire, around the Spanish Peaks, across the Cucharas, and up the Huerfano, until intercepted by Shawano in command of a little band of Tabeguaches sent out by Ouray, at the instance of General Kit Carson, then in command of Fort Garland.

Kaneache, as soon as he determined to go to war, had sent couriers to the camp of the Tabeguaches, to apprise them of his determination, and to invite them to join in his raid. Instead, however, of responding to this savage call, Ouray at once moved all his people under the walls of Fort Garland, and himself crossed the Spanish Range at night so as to reach the settlements upon the Huerfano with all possible speed, and warn the settlers of their danger. He also ordered Shawano, as soon as the band was safe under the walls of the Fort, to take a few trusty followers, and bring in Kaneache and his raiders, dead or alive. The orders were implicitly obeyed, for the ringleaders of the murderers—Kaneache and Tucisarive—were brought (in a state of perfect nudity) into the presence of General Carson. They were taken by General C. to the commanding officer at Fort Union, where it was hoped that the same justice which was meted out to white men for similar crimes would have been meted out to the red miscreants.

The result of this raid was five white men murdered, much property burned, and many head of stock driven off. All the latter, however, was recovered through Ouray's efforts, and many lives were saved by his timely and humane action.

Complaints of the non-fulfilment of the treaty of 1862, became loud and frequent on the part of the Indians, soon after its settlement, commencing at or about the time of the first annuity

situated further south in the same basin, is, if anything, a little lower.

The greater part of Nevada lies between 4,000 and 6,000 feet above the sea, but to the southward the land falls gradually, though unevenly, towards the Rio Colorado, and indirectly towards the Gulf of California. A remarkable depression occurs about latitude 36°, which is separated both from the Rio Colorado and the Gulf by table-lands varying in height from 1,000 to 5,000 feet above its lowest portion. This depression is known as Death Valley.

Lofty table-lands extend also over all New Mexico and Arizona, but gradually fall away towards the mouth of the Rio Gila and the Gulf of California, in the southwest angle of the latter Territory. In Southern New Mexico the entire country becomes depressed into an extended

plain, about the 32nd parallel, having an average elevation of from 3,500 to 4,000 feet. The depression, however, does not extend south more than fifty to one hundred miles before the general rise commences, which forms the lofty Sierras of Mexico, upon which the mountain ranges of that country rest.

West of the Sierra Nevada of California, the land slopes rapidly towards the west coast. Nature has, however, placed a barrier in the way by throwing up a series of ranges along the coast, known as the Coast Ranges. They run for the most part parallel to each other, but obliquely to the coast, so that range after range becomes lost in the sea, forming prominent headlands and rocky islands all along the shore.

W. A. BELL.

### COLORADO RANCHMEN.\*

A few years ago, when Colorado knew not of Railroads, and when her population was nomadic, some adventurous spirits located on her plains and close to her foot-hills. In the aggregate, these men were without education, and, in consequence, many of them speedily found a wild life. They took to the plains as herdsmen and drovers. From that, some few among them became owners of herds, and of those again some of them became landowners, and, as a rule, these latter are to-day well-to-do, and, in several instances, are wealthy men. But as civilization grows, and as railroad communication increases, the class of men who first settled Colorado are being pushed further west, as enterprise and education combined contend for the supremacy. The present conditions of society at the foot of the Rocky Mountains demand that a new settler be an educated man of determined purpose. To start on very small means will necessitate the borrowing of money, which can only be had at ruinous rates of interest, two per cent. per month being given on the entire sum, thus making the exorbitant interest of twenty-four per cent. on borrowed capital per annum, and this, too, on the best possible security, real estate or

house property. Any small capitalist intending to emigrate westward could not do better than to inspect the Railroad lands of Colorado, and, having decided on his locality, pitch his tent, engage a gang of navvies, put up his fence, dig his well, erect his house and offices for horses and cattle, and as soon as all is complete, and not until then, bring out his thorough-bred stock to form a nucleus for his future herds. The days for living in a dug-out or in a log cabin are gone by, except for fools and idiots, and that class had better remain where they are. Formerly to emigrate was to undergo all the horrors of uncivilized life—to be cut off from our fellow-men and from all that makes life agreeable. Now, on the other hand, well-directed emigration means to work hard for a few years to get twenty per cent. for capital, and in a few years to be an independent man.

Colorado, though still in an infant condition, affords a home market for her produce; that is, the beef raised on her plains rarely crosses her frontier until it has been paid for, and then it has not to seek an eastern market. It is consumed near at hand in the mining districts of Nevada and Nebraska. Sheep farming has not as yet been entered into to any extent, but there is no

\*From *The Turf, Field, and Farm*.

## THE SUMMIT PLATEAU AND THE ROCKY MOUNTAINS.

## PART I.

Passing westward from the Mississippi and disregarding mountains altogether for the present, the elevation of the continent gradually increases, until it attains its highest level in South Park, about the centre of Colorado. If we compare the rise and fall of the continent on all sides to two saddles, placed pommel to pommel, the pommels will represent South Park, the highest part of the median line of maximum elevation, while the prominences sloping downward from each pommel, and disappearing at the back of each saddle will well illustrate the course of the "Summit Plateau." For this Summit Plateau, if it may be so called, diverges from its greatest elevation in a north-westerly direction, to form the less elevated water-shed of Montana, between the heads of the Missouri and Columbia Rivers: while to the southward it gradually falls also, and widens out into the Llano Estacado (staked plains) of Northern Texas, and the vast plain—the Madre plateau—which occupies Southern New Mexico.

A few figures, representing average elevations only, may be desirable. The staked plains of Texas average 3,500 feet; the Madre plateau about 4,000. Rising from these and passing northwards, the Summit Plateau attains an average elevation of 7,000 feet in Northern New Mexico, from 8,000 to 9,000 feet in Colorado, 7,000 in Wyoming, and 2,000 in Montana, whence it passes into British Territory.

The country lying between the highest portions of the Summit Plateau in Colorado and the Mississippi ascends far more rapidly than the adjoining country south of it, which does not ultimately attain in New Mexico so great an elevation; while to the north of Nebraska, Kansas, and Colorado, the country has not only a still lower elevation to reach on the Summit Plateau in Montana, but (consequent upon the northwesterly direction of the central line of maximum elevation) has a far longer distance in which to reach it. We therefore actually find what theoretically we should expect—that the largest river in the continent flows through this district.

The Missouri at Fort Benton is 2,500 miles by water from its mouth, and 3,737 from tide water, and yet at the 111th meridian (South Park being on the 106th) it is only 3,000 feet above the sea. The cause is obvious. The streams of the high lands of Western Montana, where the springs do not average more than 6,000 feet, pass northwards around the most lofty part of the continent, and do not commence a southward course towards the gulf until 700 miles separate them from their western sources. United then into one vast stream (the Missouri) they meander through the less elevated districts, receiving the Platte tributary at an elevation of 968 feet, and the Kansas River at 710, before joining the Mississippi at an elevation of 460 feet.

The streams which cross the elevated country avoided by the Missouri,—namely, as before mentioned, Nebraska, Kansas, and Colorado—give very different results. The most westerly sources of the North Platte rise about 2° east by 4° south of those of the Missouri. But the Sweet Water Branch has an elevation of 7,220 feet in the highest plateaux; Medicine Bow Creek, 7,000; Laramie River, 7,175; while the South Platte at Denver, on the Plains, is 5,000 feet above the sea, and farther up the stream, in the level portion of South Park, it attains no less an elevation than 9,000 feet. The Arkansas and Canadian rivers in the same manner pass at first through very elevated regions, not taking into account at all the actual mountains or the mountain streams which debouch upon these upland plateaux, for at present I only refer to the general elevation of the country.

West of the Summit Plateau the country falls at first, but only to a limited extent compared with the eastern slope; for the entire district lying between the Summit Plateau and the Sierra Nevada consists of table-lands, varying in elevation from 4,000 to 8,000 feet above the sea. The elevation of nearly all Utah exceeds 5,000 feet, excepting only a part of the Great Salt Lake Basin, the surface of which lake is 4,290 feet. Utah Lake, whose surplus waters fall into Great Salt Lake, is 4,790 feet high, and Lake Sevier,

**ELECTRICITY AND HEALTH.**—That our atmospheric eccentricities deserve much of the credit Colorado has achieved for promoting the health of the invalid and the wealth of the healthy, inveterate must be the doubter. Healthy people here are always made cheery and bright every morning, especially if they get up early enough; and vivacity gives life to muscle, brain and trade. The mere altitude of Denver cannot account for its benefits to invalids, for they may go a good deal higher and fare much worse. Investigation into the electricity of nature is yet in its infancy. We have been giving pretty much of our whole time to that of art, ever since Franklin proved to us that our home-made electricity was just about the same substance as that ripping the sky for the thunder to pass. And we have neglected the sky ever since, because all our time has been engrossed in experiments to manage that in our hands. Morse tamed and harnessed it from pole to pole—some made of wood, the best of iron. Doctors have it scientifically put up in neat mahogany boxes as a convenience to batter a little of the sultry substance into nerve and muscle. But up to this hour the most experienced disciple of the use of electricity in disease turns to it with as much an air of authority, and as little interior amount of confidence as did Canute to that little wave. Canute had to take a back seat. We have got along pretty well with the subordination of Franklin's discoveries to material uses; but in his own obituary notice he promises to reappear "in a new edition, revised and corrected." Our pious ancestors supposed he alluded to his anticipated heavenly career; but it is clear to the calmer spirit that, being in good health when the inscription was written, the mind of the old philosopher was on his hobby, and his right eye turned toward Colorado. If he was not intent upon the relations of celestial electricity with terrestrial affairs he never would have pointed his rods up after it. Our government has wisely got back to where Franklin started, and has its agents at all prominent points questioning the clouds. Colorado is the very rarest field in the world for the study of electricity. One can often sit in his door and see lightning affectionately playing over a neighbor's stove-pipe; and the writer is informed by as credulous a witness "as the market affords" that often an honest wagoner is caught on the plains by a storm, and sees the lightning play with the metallic parts of the harness and revolve around the tires of his wheels fourteen times faster—or say fifteen—than the wheels revolve around their axles; while he stands for all the world just like that man in the cartoon of the zodiac, receiving javelins of lightning on every square quarter of an inch, and neither scared nor hurt.—*Correspondence of the Louisville Courier-Journal.*

**VITAL STATISTICS OF THE TERRITORIES.**—A little digging into the volume of vital statistics, published as a part of the United States census report for 1870, lately printed, will reap a heap of interesting information relative to life and death in the Territories. There was no Territory where death did not occur from consumption, though there was only one death in Arizona, four in Wyoming, five in Idaho, thirteen in Dakota, seventeen in Montana, and twenty-four in Colorado, though not one case of the last-named number was contracted after residence commenced in Colorado. Those who have a wholesome dread of small-pox will probably help to populate Wyoming, Idaho, Dakota, and Colorado, where not a single case of this loathsome disease is reported. Arizona suffered heavily, however, as one in every 2.7 deaths was from small-pox. The percentage of deaths to population was larger in Arizona than in any other Territory, the ratio being 2.61, caused doubtless by the ravages of the small-pox.—*Rocky Mountain News.*

**PROF. MARSH'S EXPEDITION.**—Prof. O. C. Marsh, of Yale College, passed through this city, a short time since, with a party of students to resume the scientific explorations which he commenced two years ago in the Western Territories. A summary of the results of his previous investigations is published in another part of this paper, and it is not too much to say that they are not surpassed in point of magnitude and significance by those of any naturalist of the present age. He has found that the arid space and the alkali plains lying between the Rocky Mountains and the Wasatch Range, where nothing now subsists but the sagehen and a few stray antelopes, were once peopled by a strange community of extinct vertebrate animals, which have not yet been found anywhere else on the earth's surface. Over two hundred new varieties of vertebrates have been disinterred in this region, including seventeen varieties of the fossil horse, ranging from the size of the common fox to nearly that of the horse of the present day—some with three hoofs to each foot, others with one hoof and two toes, and still others with the single hoof of the horse as we see him now. These were found in the Miocene and Pliocene epochs. It is shown that the entire space between these two mountain ranges was once covered by the sea during the cretaceous or chalk formation of geology. When the sea subsided there were left vast lakes in the hollows of the surrounding land, which have since been filled up with the detritus washed down from the neighboring mountains. The beds of these ancient lakes are the tombs of vast numbers of turtles, crocodiles, lizards, serpents, and fishes, while near their margins are found the remains of four-footed animals of astonishing size and strength. One of these, first discovered by Prof. Marsh, was of the size of the elephant, and its skull was provided with three pairs of horns. Lions, hyenas, foxes, and cats of extinct species were also found, together with several monkeys of a lower type than are now existing. These latter had mosquitoes, fleas, and bed-bugs, larger than the existing varieties, to torment them. No mosquito-bars, bed-bug exterminators, or other traces of man are found in the Eocene formation. Prof. Marsh's second expedition, which he has just undertaken, is provided with a Government escort, and, being thus protected against the Indians, it is expected that the results will be even more important than the former.—*Chicago Tribune.*

**WHAT DO YOU RAISE OUT HERE, ANYHOW?**—Some ten or twelve families, with about that many teams, were camped in the grove near the Platte bridge last Sunday. They came from Southeastern Missouri, and were on their way back home. One of the party said they had come out here to settle, but after traveling up and down all the creeks in this part of the Territory, had become disgusted with the country and were going back. He said "It 'pears like you 'ns don't raise anything out here, and you ain't got no right smart chance o' timber." The individual was informed that Colorado raised the finest wheat in the world, and that her flour commanded a premium in the eastern markets. "Y-a-s, I know," replied old Discontent, "but yer don't raise nothin' else." He was again informed that we raise the largest and finest vegetables, and more of them to the acre, than any State in the Union, and for small fruits we could hold our own against any country. "Y-a-s, but yer can't dig yer petaters and sich, 'till way late—an' yer hain't got no timber; an' what do yer raise out here to live on, anyhow?" We left that benighted camp with the hope that a streak of Colorado lightning would "raise" the whole outfit, and deposit them back in the "tall timber," from whence they came.—*Evans Journal.*

reason why it should not be eminently successful. The soil is dry, the water is clear and wholesome, and all or any of the varieties of the pecorine family ought to flourish; still we would not counsel the growing of mutton so much as we would advocate the growing of wool. The money to be made by the sale of meat should be a secondary consideration to the profit to be obtained from the fleece. In Colorado to-day, wool can be grown at the rate of nine cents per pound. The capital necessary to start a flock would be small. If fine wool was to be grown, grade merino ewes from the central states and pure-bred merino rams should be brought in to improve them. If long wool was to be the article dealt in, then grade ewes of any of the long-wooled families, which are to be had in abundance in Canada, and where also the various pure-bred rams are to be obtained, would answer. Capital invested in sheep farming brings in a speedy return. In one year there is a crop of wool; also the poorest lambs can be fattened and sold for food; thus the flocks are kept at a higher range, and no deterioration can take place. In the raising of neat cattle due attention should be given to improve

the quality of the stock, as at present the bovines of the territory are, save a few exceptions, of a low, mongrel description. The cows are not good enough to breed to pure-bred bulls. It would pay to bring good heifers from Illinois or Ohio, as the soil and climate of Colorado are admirable for the growth of beef. Little as yet has been done in the matter of dairy farming, but that such will be remunerative there can be no doubt, and all there is needed is a higher system of agriculture. As a horse-raising locality, Colorado will shortly be pre-eminent. The tastes of the people turn in that direction, and, as many Englishmen of capital are interested in the mines, there will be no lack of buyers, and there will be a due appreciation of first-class horse-flesh; still, again, the ranches of Colorado are largely owned by men of English descent, as can be perceived by their mode of living, and by their inherent love of good stock and of a free country life. Indeed, these same ranchmen of Colorado live to-day much as the steel-clad barons of England lived five hundred years ago, and they promise fair to be what their Norman ancestors have been, the mighty founders of a mighty race.

## MISCELLANEOUS SELECTIONS

**HINTS TO INVALIDS.**—There has been a good deal said and written about Wyoming and Colorado as a place of resort for invalids, and, from a residence of thirteen years, we are satisfied there is no place on earth that equals them in this respect. But we have had occasion to notice that but very few people who come out here for that purpose manage to get the full benefit of the country in that respect. They come here and take up their quarters in some hotel or boarding-house and settle quietly down and wait for the salubrious air of the Rocky Mountains to cure them. The late Dr. Marshall Hall, of England, said: "If I were seriously ill of consumption, I would live out of doors day and night, except in rainy weather or mid-winter—then I would sleep in an unplastered log-house. Physic has no remedy, gasping for air cannot cure you, monkey capers in a gymnasium cannot cure you. What consumptives need is air, not physic—pure air, not medicated air—plenty of meat and bread." Now, if people who come here in search of health will act upon the above hint, and give nature and the country a fair chance, we believe they will attain the object of their visit in nearly every instance. Let them organize into little companies, take some riding and pack ponies, and strike out into the hills and mountains. Let them sleep upon the ground under the starry skies. Let them live on elk, antelope and bear steak of their own killing, hroiled on the coals by their own hands. Let them bathe in the warm and mineral springs and streams, catch salmon and trout from the waters of the

rivers, and pick strawberries from the hanks each morning for their breakfast. Let them put in a summer in this way, commencing gently and as their strength will permit, and we can guarantee a cure in every instance where a cure is possible.—*Laramie Sentinel*.

**THE BALMY AIR.**—We already begin to see evidence that the Colorado settlers have determined to profit by the advice in regard to the use of moderate language in their elaborate reports of the advantages to be derived from a residence among them. One correspondent tries to account for a seeming exaggeration in previous reports. It is all owing, he thinks, to climatic influences. The air is so balmy and exhilarating, that it is well-nigh impossible for the people to either talk or write as they do in the Eastern States. "It," says the correspondent, "so to speak, turns a man inside out, supplies him with a tough, healthy skin to digest with, and gives the air a chance to cure the sore spot at the pit of his stomach. Under the circumstances, how can you blame a man for talking wildly!" Those who speak badly of Colorado, we are told by another correspondent, are "fellows who could not earn a dollar by industry in any country, and who, failing to procure food, drink, and clothing for nothing, write home to warn their friends not to be deluded by the representation that Colorado is a good place to go to."—*New York Times*.

The Western Union Telegraph Company has closed a contract with the government for the establishment of a telegraph line from Colorado Springs to the summit of Pike's Peak. A signal station and weather observatory is to be established on the top of the peak. This, it has been remarked, will be the highest office in the gift of the government.

Dr. M. Mayer Marix, of Denver, is about to make observations on the climatology of the Pacific slope and the high interior, to be embodied in an elaborate and complete report of the climate of the entire United States with reference to its influence upon the various forms of disease. The work is being undertaken by the American Institute of Homoeopathy, and the Union has been divided into six sections for the purpose of observations. Dr. Marix expects to stay several days at various altitudes, but will make his headquarters at Georgetown, which, in altitude, is about midway between the eastern boundary of Colorado and the highest peaks.

### MINING INTELLIGENCE.

"The Leavenworth Mountain Mining and Tunneling Company," with a capital of \$1,000,000, has recently been organized in Georgetown.

The Boulder *News* says that the extent of the telluride belt of gold-bearing ores, in Ward district, is proving to cover a greater area than was at first supposed.

The rush to San Juan continues unabated.

Black Hawk's mines sent \$80,000 worth of gold bullion into the world last month.

The "Idaho" in Caribou district, has been sold for \$150,000.

The crushing mills at Georgetown are busily engaged on orders for shipment.

The prediction that the mines of the South Park region would be exhausted by a few months' working has not proved well founded, as the mines continue to yield exceedingly rich returns.

Tunneling is now being very generally resorted to in preference to the sinking of shafts.

Professor J. Alden Smith has presented the Central *Register* office the first bar of pure bismuth ever produced from Colorado silver. The specimen of mineral from which this bar was taken, assayed 64 per cent. bismuth, worth \$4.50 per pound. The ore also yields about 600 ounces silver per ton, in addition to the immense wealth of bismuth.

The proprietors of the celebrated Idaho mine at Caribou are about to resume work, and have already taken out the water from the 112 foot shaft. The crevice in this shaft is over four feet in width, displaying a fine body of ore throughout. This mine will soon add largely to the bullion product of that district, as very little has been stepped out.

The Georgetown *Mining* says: During the last month the Colorado Central Lode produced nearly \$20,000. The raise would have been much more than this had it not been impossible to work in the stopes any longer without a better supply of air. A large amount of dead work therefore was necessitated in running a connecting drift between the Weaver and Lynn shafts. The whole mine is now abundantly ventilated, and during the coming month it is expected that the yield will average considerably over \$1,000 per day.

It is stated that the old placer mines on the Ortiz Grant, near Santa Fe, New Mexico, have been sold by the New Mexican Mining Company to an English company for a sum approximating five hundred thousand dollars, and that it is the intention of the purchasing company to commence operations by running a flume or ditch a distance of eighty miles.

Accounts from the new mining district at Hardscrabble continue to be very favorable. The mining camp is about 5 miles from the new town of Rosita, which latter is about 25 miles from the mouth of the Hardscrabble Creek, 50 miles from Pueblo, and 24 from Canon City. Two shafts have been sunk on the Senator; the deposit shows a crevice of eight feet on the bottom, the ore from which assays from \$5 to \$8000 per ton; in all probability the mill return will be about \$100 per ton.

The Cameron Brothers in Clear Creek Valley, near to Black Hawk, have a number of Chinamen engaged as miners. The *Register* says that they work steadily and faithfully, but talk most incessantly. They are very obedient to one of their overseers. Their contract with the Cameron Brothers, was for a stipulated time at \$35 per month, without board. A second instalment of about 46 arrived a few days ago, and propose to engage in business on their own account, having leased several hundred feet of side-ground from the Camerons.

An "Old Miner" writing from Caribou, says it is surprising to see the amount of labor now being done there, both in the old mining camps and in new camps just starting up. The famous Caribou Mountain is literally covered with miners outside of the Caribou mine. The Pomeroy Mountain is being prospected lively and there are some very fine leads being discovered. There has been quite a rush to the "Fourth of July" lode, now owned by Dr. Mason and others, and there have been some rich leads discovered away out beyond the "Fourth of July," over the snowy range. The Bay State and Colorado Mining Company are pushing their tunnel through with every prospect of success. They have got up a good blacksmith shop and are doing all their own work. McFarland Mountain begins to look like quite a lively place. There are good mines all through the district, and all it needs is capital to develop a few. Some of the best lodes will be developed by tunnels, which is the only sure and safe way to work most of the mines in the Grand Island district. Wages range through the mines, this season, all the way from \$2.75 to \$3.50 per day; good board from \$6 to 8 per week.

The furnaces at the School of Mines, Golden, are now completed. They are constructed after the plan of Vivian & Co.'s Smelting Works Furnaces at Swansea, Wales. The muffle, or assay furnace proper, is made entirely of fire brick, and arranged with moveable grate bars which can be taken out from below. The muffle is of sufficient capacity to perform a large amount of assays per day. The apparatus for wet assays will be made similar to that of the United States Assay office in New York. An experimental reverberatory furnace is on one side of the assay furnace, and a large crucible furnace, for manufacturing purposes, on the other. The sand bath furnace can not be completed until the arrival of the steam boiler. Its construction admits of the use of a plain eight-horse cylinder boiler, giving steam for technical as well as warming purposes, the waste heat warming a body of sand for laboratory and evaporating purposes. When the reagents tables, which will be fitted up with bunsen burners, as there is gas in the building, will be completed, and several appliances arranged unnecessary here to mention, the beginning of a good metallurgical laboratory will be insured.



## SUMMARY OF NEWS.

The hotels at Colorado Springs and Manitou are full of guests.

Bishop Randall laid the corner-stone of an Episcopal Church at Colorado Springs, on the 12th of last month.

Senator Morton has been availing himself of the benefits of Colorado's bracing atmosphere and healing waters.

A large party of Eastern Editors mostly connected with prominent agricultural journals, are now "doing" Colorado.

Manitou has been visited during the past month by a large number of railway notabilities.

There has been a large influx of school-masters to Colorado this season.

Colorado Springs is now two years old, and has a population of about two thousand. Five hundred colony memberships have been taken out.

Grace Greenwood is having a cottage built at Manitou.

The Town Trustees of Colorado Springs have advertised for bids for the erection of a school-house and public hall.

Prof. Haylen says that Long's Peak is two hundred feet higher than any other mountain in the Territory.

Work on the oil well bore near Canon City will be prosecuted as soon as casing arrives from the east.

The post offices at Carhoo and Colorado Springs have been made money order offices.

The merchandise of Georgetown is valued at \$350,000, the personal property at \$150,000, and improvements on real estate at \$500,000.

The assessed valuation of property in Douglas county amounts to over two million dollars—about the same as Jefferson county.

A number of new buildings have been commenced in South Pueblo during the last few weeks, and that lively place seems to be growing rapidly.

The live stock in Huerfano county is summed up by the assessor as follows:

	No.	Value.
Cattle, - - - - -	15,406	\$188,927
Mules, - - - - -	162	7,845
Asses, - - - - -	170	2,290
Sheep, - - - - -	61,945	111,322
Goats, - - - - -	11,945	2,295
Hogs, - - - - -	423	1,436
Horses, - - - - -	1,312	52,588

Governor Elbert has received favorable responses from the governors of Montana, Dakota, Nebraska, Wyoming and New Mexico upon the subject of a convention for the purpose of taking some steps towards a systematic irrigation of the western country. It is proposed to hold the convention in Denver on the 15th of October.

A new town is being laid out on the Golden and Julesburg railway, some sixty miles west of Julesburg, and near the centre of the proposed county of Platte. The parties directly interested are from Tennessee, and will take out a large canal this season, so that settlers can raise crops next season.

There was snow at Georgetown and the thermometer down to 40 on the 1st of July. Georgetown is about 8,500 feet above sea level.

The assessor's books for El Paso County, show that during the last five years, the valuation of property has increased nearly ten-fold, namely, from \$233,166 to \$2,108,045; cattle have increased nearly five-fold, horses nearly seven-fold, and sheep nearly fifty-fold.

Colorado is thirteen times as large as Massachusetts, while Dakota and Arizona are half as large again as Colorado. Our eleven Territories contain over one billion and a quarter of acres, exceeding by nearly two hundred thousand square miles, the aggregate territory of all the present admitted States of the Union.

A pavilion and other conveniences for visitors are to be provided at the Soda Spring near Canon City.

It turns out that the "Indian affair" at Rawlins, Wyoming, which, it was feared by some, would result in a general rising of the Utes, was altogether misrepresented. Information from the Indian agent shows that no Utes were killed, but, on the contrary, that they are and have been on their reservation, and as peaceably inclined as heretofore. It was discovered in the investigation that the Indians fired upon and killed by the sheriff and his party, were Arapahoes in Ute disguise.

An unusual number of eminent men of science are visiting Colorado the present season, for the purposes of scientific research. Among others may be mentioned Professor Hayden of the U. S. Geological Survey; Dr. Joseph Leidy, of Philadelphia; Professor T. C. Porter, of Lafayette College, Easton, Pa.; Professor E. D. Cope, paleontologist; Professor De Lesquereux, fossil botanist; Professor F. B. Meek, of the U. S. Geological Survey; Professor W. D. Whitney, of Yale College, &c. The *Denver Tribune* which gives particulars as to the work of the above scientists, says there is probably no section in the United States that offers a finer field for the researches of scientific men than Colorado.

Governor Elbert has appointed H. M. Hale of Gilpin county, Superintendent of Public Instruction. Professor Hale is a graduate of Union College, New York, of the class of 1850, since which time he has made teaching a profession, although he had acquired some experience prior to his graduation. Professor Hale has held, during the past four or five years, the position of Superintendent of the Public schools in Central.

The *Las Animas Leader* gives the following view of the state of affairs in that town: The railroad is working along, settlers are coming in rapidly, and, as a result, business is active and prospects good. It may not be out of place to give a few particulars of the cost of building in Las Animas which will be of advantage to those contemplating visiting that point. Dwelling houses may be rented from \$15 to \$30 per month. A house of, say, two small rooms will cost from \$15 to \$20. This does not include water, which as yet, is only obtained from the river. Business houses range from \$25 to \$60 per month. Colorado lumber is sold for \$45 per thousand, while eastern lumber is as high as \$60. Shingles are \$7.40 per thousand, and nails from eleven to fifteen cents per pound. Oil costs \$2 to \$2.25 per gallon, and white lead is from \$4 to \$5 per keg. Carpenters are paid \$4 per day, and painters get thirty-five cents per yard for two coats. Adobes are worth \$6 per thousand, and hauling is \$5 per day. Plastering is thirty cents per yard, and laborers from \$1.50 to \$2 per day.

The crops in the vicinity of Bergan's Park have not been touched by the grasshoppers, and a good crop is reasonably looked for. These mountain ranches are not irrigated as lands in the valleys are, but depend upon frequent rain showers for their supply of moisture.

Trinidad shipped, during the past year, seven hundred thousand pounds of wool, between ninety and one hundred thousand pounds of pelts, and five hundred thousand pounds of other freights.

The Agricultural Industrial Association of Southern Colorado have decided to hold a fair and agricultural industrial exposition in the grounds of the Association, on the 1st, 2d, 3d and 4th of October.

F. J. Stanton, Esq., in one of his articles on practical irrigation, says the occasional high winds in Colorado are very disastrous to ordinary wind-mills unless protected from the prevalent wind blast. "Mr. Butters, a farmer on Cherry Creek, nine miles from Denver, has used one of the ordinary wind-mills for pumping water with a two-inch pipe and a cistern pump. It worked admirably for five days with a common breeze, but on the sixth day a high-pressure blast carried away the vane, fans, and all the wind apparatus, leaving the machinery for pump, etc., standing naked and alone. A wind-mill with adjustment for opening and closing the fans, as the wind is increased or decreased, is the only kind adapted to Colorado."

The Boulder *News* publishes an important table of figures, giving the crop of last year—1872—in St. Vrain and Left Hand Valleys. It foots up 1,686 acres of wheat, yielding 41,710 bushels, or an average of 24½ bushels per acre; 1,030 acres of oats, yielding 31,406 bushels, or an average of 30½ bushels per acre; 539 acres of corn, yielding 11,720 bushels, or an average of 22 bushels per acre. There were 1,872 tons of hay cut by the farmers in these valleys, which constitute about half of the cultivated farming land in Boulder County; the valleys of the two Boulders constitute the remaining portion. In this last named section the average of last year's wheat crop was 30 bushels per acre, so that the average for the county is properly placed at 28 bushels per acre.

### RAILWAY INTELLIGENCE.

The Commissioners of Fremont County have authorized the issue of \$100,000 in bonds of the County to the Denver and Rio Grande Railway Company, recently voted for the extension of the road to Canon City.

The Atchison, Topeka and Santa Fe Railroad has made an important change in the terms of sale of its lands. Hereafter sales will be made on eleven years time, with no payments except annual interest on purchase money for the first four years.

According to the Golden *Transcript*, the contract for the completion of the road from that point to Bear Creek had been let, and the work on that part of the line was to be finished by the first of this month.

The Boulder *News* states that the iron for the Boulder Valley Road is continually arriving at Erie, though the actual work of laying it has not commenced, and probably will not until it is all at the front.

The Denver *Times* says there is a fair prospect for an immediate resumption of grading on the Julesburg Branch of the Colorado Central.

Work is being pushed on the grading of the Golden and South Platte Railway, which is designed to run from Golden to a point on the Denver and Rio Grande road at or near Littleton.

The Denver and Rio Grande Railway management are still making additions to their rolling stock, and have just received a fine new passenger coach—the Santa Fe—from Jackson & Sharp, of Wilmington, Del. The coach is 45 feet long, by 7 feet 9 inches wide, and has seats for forty passengers. The interior is finished with birds'-eye maple and walnut.

The citizens of Bent County are about to vote a proposition to issue \$100,000 in bonds in aid of the Arkansas Valley Branch of the Kansas Pacific Railway, provided it touches Las Animas City, the principal town of that County.

The certificate of incorporation of the Denver and Ralston Creek Railway company has been filed. It provides for the construction and operation of a railway and telegraph line from Denver and running by way of Ralston Creek, on the Colorado Central railroad, and from thence by way of Ralston Creek Canon to Central City, with a branch to Caribou. There are three trustees, William H. Case, Alfred H. Clements and John W. Stiff. Denver is designated as the principal point of business.

The Denver and Rio Grande Railway is attracting universal attention. The Lavenworth *Commercial*, in referring to the annual report of the directory, says: "A rate of speed equal to that of the broad-gauge lines has been shown to be possible and profitable, forty miles an hour being easily attained when desired, without affecting the steadiness of the train. For the transportation of all varieties of freight, their cars have proved well adapted, and in the matter of construction thirty-seven and one-half per cent, has been saved on the first cost. This pioneer route is pushing on rapidly towards the goal of its ambition—the City of Mexico."

The Denver and Rio Grande Narrow-Gauge Road has found plenty of followers since it demonstrated its practicality and success. Almost immediately after its first section was running the whole country went into the narrow-gauge business, and it is said that now there are 700 miles of narrow-gauge in operation in the United States, most of which have been built within the last eighteen months, and there are projected and building, 13,000 more. Fifteen roads are in operation.

The grading on the extension of the Denver and Rio Grande Railway southwards from Pueblo is progressing rapidly, and will be completed to the Huerfano by the first of November.

The track is being laid rapidly on the branch of the Kansas Pacific Railway, from Kit Carson on the main line to Fort Lyon, fifty miles distant, in the Arkansas Valley. The branch is to be completed in September. It is currently reported that it will be extended up the valley from Fort Lyon to Pueblo at an early date, but the plans of the Company are not definitely known.

Articles of incorporation of the Colorado and New Mexico Railway Company have been filed for record in the office of the County Clerk of Las Animas County. The incorporation is formed for the purpose of building and operating a Railroad and Telegraph Line from the western terminus of the Atchison, Topeka and Santa Fe, in a westerly and southwesterly direction through the counties of Bent and Las Animas, in Colorado, to Santa Fe; and also a road from the most suitable point on said line through the counties of Bent and Las Animas to Trinidad, and also a road to Pueblo. The incorporation is simply the act of the Atchison, Topeka and Santa Fe Railroad Company, under the laws of Colorado, and signifies nothing as to the time these lines will be built.



